

REPORT

OF AN

OPERATION

For Removing a Foreign Body.

FROM BENEATH THE HEART.

BY E. S. COOPER, A. M. M. D.

Published by the San Francisco County Medico Chirurgical Association as an additional paper to its Transactions for the year 1857.

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1857.

SAN FRANCISCO, Sept. 1st., 1857.

E. S. COOPER, M. D.,

DEAR SIR:

At a meeting of the San Francisco County Medical Chiurgical Association, held on Friday Evening, Aug. 21st, 1857, the undersigned were appointed a Committee to publish the case of Mr. Beal, by authority of the Association. For this object we have the honor to request a copy of your Report of said case at your earliest convenience. The Committee undertake the discharge of their duty in the premises with pleasure, the more so, since the successful result of the extraordinary operation upon Mr. Beal must, when fully known, be alike honorable to Surgery, and consoling to Humanity.

Very Respectfully,

M. B. ANGLE, M. D.,
J. P. MACAULEY, M. D.,
P. J. REILLY, M. D.
R. BEVERLEY COLE, M. D.
DAVID WOOSTER, M. D.

Committee.

SAN FRANCISCO, Sept. 1st, 1857.

GENTLEMEN:

Your note of to-day, requesting a Report of the case of Mr. Beal for publication, is before me. In reply, I shall not attempt to burthen my compliance with your request with a pompous affectation of modesty, but would say, that should it be the means of subserving, in the smallest degree, the cause of our noble profession, I shall be glad.

Very Respectfully Yours,

E. S. COOPER.

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J. P. MACAULEY, M. D.,
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REPORT.

MR. PRESIDENT AND GENTLEMEN :

The operation I am about to describe has been the subject of such a variety of comments and so differently represented by the public prints, as well as by parties who were not present, and consequently knew nothing of its real merits, that in giving a true description of the case it appears due to myself to mention this fact, and also to refer to those present at the operation, for confirmation of my report. No one who knew anything of Beal's condition at the time, hesitated to say that he must die without an operation. He expected to die under the knife and gave directions about his burial before the operation began. His friends expected him to die, and were assured that such would probably be the case ; but all wished him to embrace the only remaining chance of prolonging life, and guided by a brave spirit, he most cheerfully took all risk and fortune rewarded his courage.

It has been known from immemorial time that wounds penetrating the cavity of the chest are not necessarily fatal. This knowledge suggested operations upon the thorax in the very infancy of surgery. Accordingly we find that exsection of the ribs was practised by Galen in his native village, Pergamus, Asia Minor, while he was still a very young man, as early as the first half of the second century, and by numberless other surgeons up to our own time. (*Mercure de France, April 1758.*) Suif excised two ribs of a man named Botaque, in such a manner as to be able to introduce the fist into the chest. (*Velpeau's Operative Surgery.*) Even the native Fiji Islanders frequently cut through the intercostal spaces by means of a splinter of shell, and extract barbed arrows from the inside of the chest. (*Williams Tonga Islands.*)

The operation of Richerand, where a most extensive section was

made, is well known. Since 1818, the ribs have twice been exsected successfully, by Cittadini, by Percy, for caries of two ribs, resulting from gun shot wounds, by M. Blandin, at Beaujon, by Roux, at la Charité, and by Mott, of New York.

But the case of Richerand is the only one that bears any resemblance to the one I am about to report. In Richerand's case "it became necessary to remove the middle portion of four ribs, to the extent of several inches. The pleura, which was greatly thickened, had also to be removed, so that the pulsations of the heart were exposed naked to the sight." This operation was for cancer, and the patient died at the expiration of a few months, from the regeneration of the disease. (*Velpeau loc. cit.*)

Wounds of the heart itself are well known not to be necessarily fatal. Dissections have revealed cicatrices on the heart when the subject had died from an entirely different cause long after the wound had been received. Cases might be cited with names and dates if they were not well known to the learned.

But the demand for surgical interference in cases of foreign bodies in the chest, depends upon the violence of the attendant symptoms and upon the nature of the foreign body itself. Lead for instance will generally become eneysted and cause comparatively little inconvenience after it once stops, while a small bit of iron will produce suppuration and is liable to keep changing its location and may therefore produce violent symptoms after months or even years.

CASE.—Mr. B. T. Beal, *Æt.* twenty-five of Springfield, Tuolumne County, California, with some other young men, in a frolicsome mood, resolved to burst an old gun, and accordingly loaded it with about eighteen inches of powder, to which they connected a slow match and then endeavored to seek security by flight. Unfortunately a brisk wind blew up the powder with great rapidity and the gun exploded before they had retreated far. A slug of iron an inch long and half an inch in diameter had been driven into the gun as a temporary breech pin, which bursting out in the explosion struck Mr. Beal in the left side below the armpit, fracturing the sixth rib, entering the chest and lodging, as was afterwards found, beneath the heart upon the vertebral column, just to the right of the descending aorta where it had evidently remained from the period of the injury, January 26th, 1857, until it was removed April 9th, seventy-four days after. In a state of extreme prostration he was brought to the city, having had frequent discharges of several ounces of purulent matter at a time from the chest through the original wound. The left lung had lost its function, probably less on account of the violence done the lung at the time than from the subsequent accumulation of pus in the chest, though he had bloody expectoration for a few days. He came to my Infirmary on Mission Street 8th of April, and during the night following had alarming symptoms of suffocation, so much so that I entertained most serious apprehensions that he would not live till morning. So urgent

had his symptoms become that after his arrival he was constantly in absolute danger of dying from suffocation, so that no time was to be lost, even for him to obtain rest from the fatigues of his journey. Under the greatest disadvantages therefore, the operation had to be performed; otherwise he must be abandoned to his fate, which a surgeon feels but little inclined to do in case of such a brave patient who is willing to endure any operation however painful or hazardous to save life.

OPERATION.—The patient being placed on the right side, an incision through the soft parts three inches long was made: commencing opposite the seventh true rib and following the track of the original wound, was carried over the fifth and sixth ribs, which were drawn close to each other by contractions, consequent upon the injury. The sixth true rib was found fractured and slightly carious. A transverse incision three inches long, was now made, beginning at the centre of the first when the soft parts were reflected, so as to expose the ribs. Torsion was applied to one intercostal and two or three small arteries which bled rather freely. The wound was now fully absterged after which an effort was made to find the breech-pin by using the probe. This failing the incisions were lengthened and the ribs further exposed. A portion of the sixth rib which was carious was now removed and was followed by the discharge of about ten ounces of fluid resembling venous blood, contained in a cyst which was broken by the removal of the portion of the rib. A most extensive but careful examination with the probe was now made in order to detect, if possible, the foreign body, yet to no purpose; but air having already been admitted into the chest I unhesitatingly removed portions of the fifth and seventh ribs together with such an additional piece of the sixth as was necessary to make ample room to afford every facility for the further prosecution of the search. Some very firm adventitious attachments were now broken up with the fingers, which gave exit to an immense amount of purulent matter—two quarts at least—which had been entirely disconnected with the fluid first discharged from the chest. The pleura had several large holes through it and was thickened to four or six times its natural state in some parts. The pulsations of the heart in the pericardium could be distinctly seen through these holes. Brandy was now administered freely to the patient who appeared to be rapidly sinking. The left lung was found completely collapsed after the discharge of purulent matter. By giving brandy freely the patient soon began to revive when the search for the foreign body was resumed. At this time the fingers could be placed upon different portions of the heart and feel its pulsations distinctly, but could obtain no clue to the location of the foreign body. The patient now appeared almost completely exhausted. Brandy was given freely. Chloroform was not administered at first, owing to the expected collapse of the left lung on the admission of air into the chest, but a considerable reaction taking place a limited quantity was now used and the manipulations continued.

A sound was introduced and the thoracic cavity explored for at least three-quarters of an hour before anything like a metallic touch could be recognized, and then it was so indistinct as to leave the matter doubtful.

The space immediately above the diaphragm was considered the region in which the metal was most likely to be found ; since the immense amount of supperation which had taken place, it was thought might have dislodged, and gravitation carried it down to the bottom of the chest. The metal not being found here there was no longer any probable opinion to be formed as to its whereabouts, and to describe the difficulties of the search that followed would be difficult if not impossible. No one can have any just conception of the degree of patience required to do what was done, save the one who did it. This is not spoken boastingly, but it is simply the truth. It is sufficient to say that a general exploration of that side of the chest was made, and then it was taken by sections, occasionally passing through holes in the pleura, which latter appeared to have scarcely no normal relations to the surrounding structures, touching by lines the entire surface of the parts, and at last the sound appeared to encounter something of a metallic nature beneath the heart, but the pulsations of that organ were so strong against the instrument as to render it difficult to settle the matter definitely. At last, however, it became evident that the location of the iron was found, and I endeavored to move it out of its position with the point of the sound, in order to get it into a place more eligible for extraction by the forceps. I failed in this, and in manœvering the instrument finally lost the track by which the sound had first passed back of the heart to the metal, and it was during my efforts to recover this, and which was accomplished with the more difficulty owing to some membranes falling in the way, that I discovered the sound had in the first instance reached the metal by passing between the descending aorta and the apex of the heart. The metal being again found, the sound was steadily and strongly held in contact with it until a pair of long lithotomy forceps was thereby conducted to the spot and the breech-pin seized and extracted, which, however, was the work of several minutes, owing to the great difficulty in grasping it even after the forceps was made to touch it. The forceps, however, being heavier, the motion of the heart was not so embarrassing to its manipulations as it had been to that of the sound, but owing to its size it could not follow the sound and be expanded sufficiently to seize the metal without lifting the apex of the heart considerably out of its natural position. After the metal was extracted, the patient was turned on the wounded side, and a tent placed in the track of the original sinus, after which the wound was dressed and the sufferer permitted to rest in bed with his body still inclined towards the injured side.

April 10th.—Greatly prostrate ; slight pain in the left breast ; no motion of that lung ; gave morphine.

April 11th.—Same as yesterday.

April 12th.—Slight cough ; gave enema and light nourishment.

April 13th.—Evacuations from bowels ; slight discharge from the wound, being the first since the operation.

April 14th.—Improving ; considerable appetite.

April 15th. do do do

April 16th. do do do

April 17th. do do do

April 18th. do do do

April 19th.—Considerable cough.

April 20th.—Severe cough to-day and pain in the right side, as also in that of the wound, though not so great as in the other.

Skin dry ; no expectoration ; urine scanty and highly colored. These symptoms were very alarming, the more so from the fact of their implicating the hitherto sound lung.

The pneumonic symptoms continued without abatement for several days and finally subsided, but left the patient greatly prostrate. On the 26th purulent expectoration began and continued to increase for about a week, when nearly a pint was discharged in the space of twenty-four hours, and during this time but little escaped from the wound. After this period, for nearly two weeks, the discharge was greater or less from the wound in proportion to the amount of purulent matter expectorated and vice versa. The matter from both places being of the same quality and occasionally tinged with blood.

At the end of two weeks from the time the communication between the trachea and the original suppurating surface appeared to have been established, the purulent expectoration began gradually to subside, and the patient's condition slowly to improve until the end of seven weeks after the operation, when he left the city. There was no perceptible motion of the left lung at this time. He was considerably fatigued by his journey from the city to the country, and appeared worse for several days in consequence, but eventually began to improve rapidly and continued to do so until three weeks since, at which time, as is well known, he visited this city, and was so improved as not to be recognized by medical men present at the operation, who had seen him every day for some weeks after.

Aug. 1.—*Present condition.*—The external wound has entirely cicatrized. No cough nor pain in the left side—good appetite and all the functions of the system well performed.

The left breast is somewhat sunken, but the upper lobe of that lung has recovered in a great degree its former action. This operation was performed in presence of the following medical men, some of whom assisted—

“ I. Rowell, Censor of San Francisco Medical Society.

“ Wm. Carman, Secretary San Francisco Medical Society.

“ B. A. Sheldon, Vice President, San Francisco Medical Society.

Dr. L. Grover, Member San Francisco Medical Society.

" J. M. Williamson, Censor of State Medical Society.

" Wm. Fifer, member State Medical Society.

" R. Beverly Cole, Pres. S. F. County Medico Chirurgical Association

" P. J. Reilly, Secretary do. do. do. do. do.

" L. Hubbard, Ex-Pres. S. F. County Medico Chirurgical Association

" Wm. Hewer, Censor do. do. do. do. do.

" J. M. Tewksbury, do. do. do. do. do.

" F. P. Wierzbicki, do. do. do. do. do.

" J. Lee Webster, do. do. do. do. do.

" J. P. Macaulay, late Surgeon San Francisco City Hospital.

" B. F. Hardy, late of Honolulu, S. I.

" J. S. Calef, Member San Francisco Medical Society, and others.

REMARKS.—The carious condition of the sixth rib was probably a fortunate circumstance in this case, since it favored the formation and continuation of a sinous opening through which purulent matter was discharged from time to time, prior to the operation, and which limited, to some extent, the immense accumulation that, as it was, had nearly terminated the patient's life previous to that period.

His subsequent astonishing recovery is attributed to his great cheerfulness, good constitution, and to the effects of our unparalleled climate, in which it appears nearly impossible for a patient to die with almost any ordinary degree of injury, provided a reasonable share of attention is afterwards given him. San Francisco has the advantage of every other city on the globe, in regard to climate, for surgical operations, since, if owing to any peculiarity of the case, our coast breezes are not equally well adapted to all the stages of convalescence after an operation, it is an easy matter to obtain almost any desirable change by half a day's easy travel, which I think can be said of no other city.

In Mr. Beal's case, while nothing could have been better than our cool bracing atmosphere, for the first few weeks after the operation still, having recovered from the immediate effects of that, the subsequent lung symptoms were much better controlled by a removal to the Santa Clara Valley, thirty miles distant, than they could possibly have been by medicine, conjoined with the greatest care that could have been bestowed upon him in this city.

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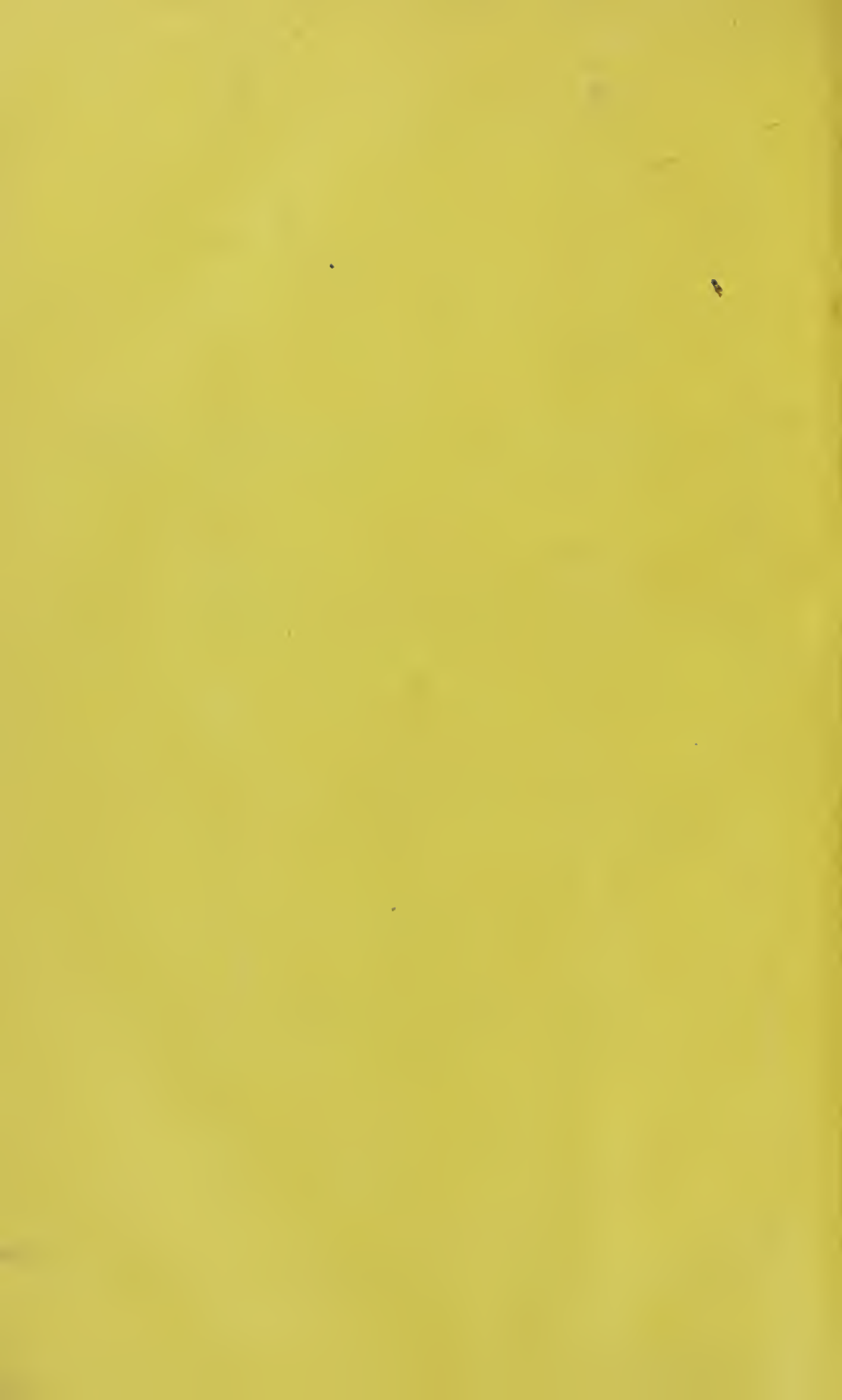
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